

TWO NEW SPECIES OF CHLOROPERLIDAE (PLECOPTERA)  
FROM MISSISSIPPI

REBECCA F. SURDICK AND BILL P. STARK

(RFS) Department of Biology, University of Utah, Salt Lake City, Utah 84112; and (BPS) Assistant Professor of Biology, Mississippi College, Clinton, Mississippi 39058 and Research Associate, Florida Collection of Arthropods, Gainesville, Florida.

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*Abstract.*—*Hastaperla chukcho* n.sp. and *Alloperla natchez* n.sp. are described and the genitalia figured for males and females. Holotype male and allotype female specimens are designated for both species from Claiborne Co., Mississippi.

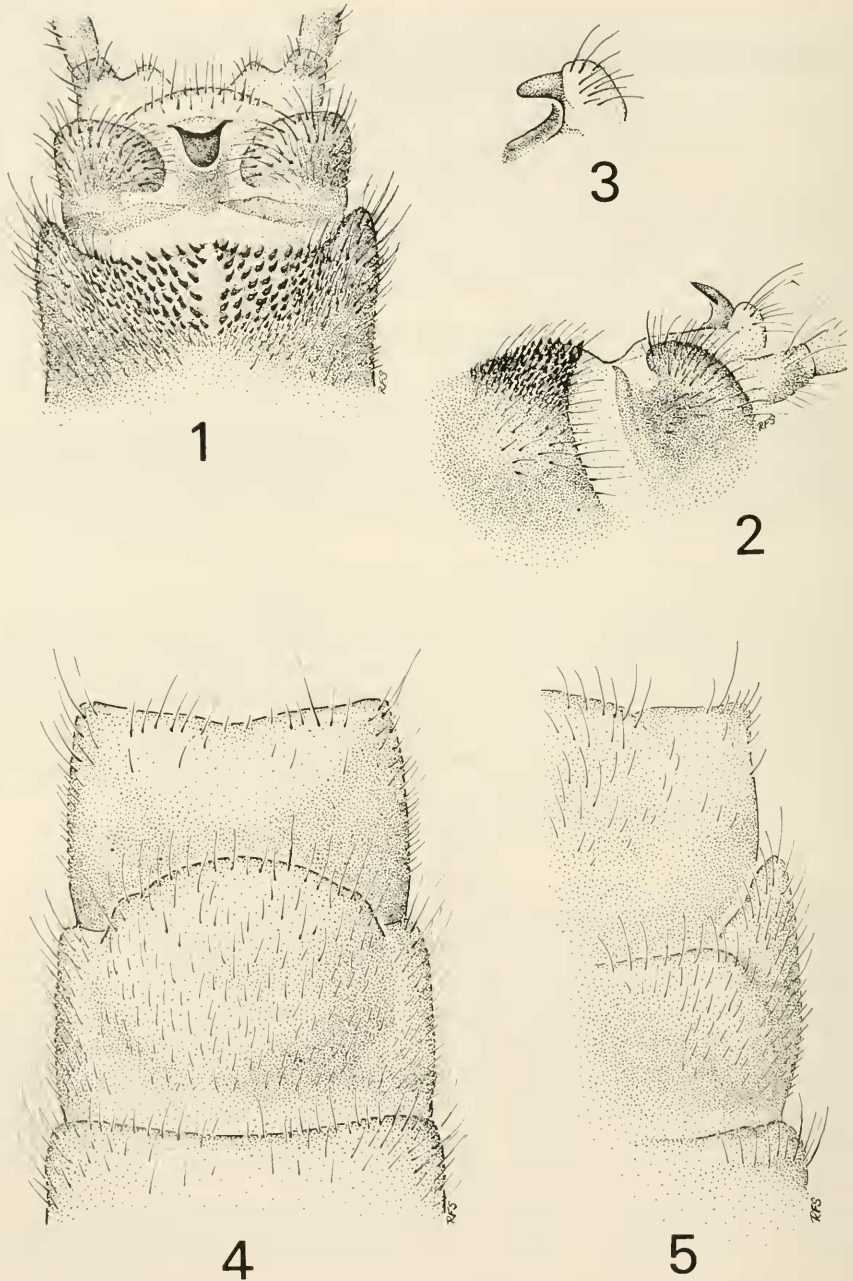
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During investigation of the Mississippi plecopteran fauna, two undescribed species of Chloroperlidae were discovered. Since recent studies in Texas (Szczytko and Stewart, 1977), Louisiana (Stewart et al., 1976) and Florida (Stark and Gaufin, 1979) failed to collect *Alloperla* or *Hastaperla*, these first records of Chloroperlidae in Mississippi may represent the southernmost extensions of the genera in the Nearctic Region.

*Hastaperla chukcho* Surdick and Stark, NEW SPECIES  
Figs. 1-5

General color pale yellow in life, white in alcohol. Antennae pale basally, darkened distal to 6th segment in mature specimens; head wider than pronotum, unpatterned except for 3 dark ocellar rings. Pronotum oval, wider than long; perimeter and reticulate markings dusky. Mesonotum and metanotum each with W-mark resulting from dark margined recurrent scutoscuteellar suture and dark bisecting line. Abdomen with dusky longitudinal stripe extending from segment 2 through 5; cercal segments 7. Wings macropterous, hyaline; veins dusky in mature specimens; 2nd anal vein unbranched in forewings; anal lobe and fold absent in hindwings.

Male.—Forewing length 6 mm; body length 5.5-6 mm. Epiproct tip sclerotized; in dorsal aspect tablike, anteriorly recurved, slightly longer than wide with distal edge semicircular; in lateral aspect tab extension longer than thickness of support at base of tip, dorsal  $\frac{1}{2}$  domed, sloping to a bladelike apex. Basal rod of epiproct parallel sided, as thick as basal width



Figs. 1-5. *Hastaperla chukcho*. 1, Male terminalia, dorsal. 2, Male terminalia, lateral. 3, Epiproct, dorsolateral. 4, Female terminalia, ventral. 5, Female terminalia, lateral.

of tablike tip, lightly sclerotized. Anal lobe enlarged, hairy. Posterior  $\frac{1}{2}$  of 9th tergum with centrally interrupted patch of stout bristles. Aedeagus with 2 supportive rods and minute, colorless spines.

Female.—Forewing length 7 mm; body length 6.5–7 mm. Subgenital plate semicircular in ventral aspect, posterior extension of flap  $\frac{1}{3}$  length of 8th segment, lateral slopes slightly indented near base; appearing as curved, pointed extension of sternum in lateral aspect, with slightly longer setae than remainder of sternum. Eighth and 9th sterna with 2 longitudinal setae-less bands even with lateral bases of subgenital plate.

Types.—Holotype  $\delta$ , allotype  $\eta$ , 13  $\delta$ , 8  $\eta$ , paratypes: Mississippi, Claiborne Co., Owens Crk., 3 miles south of Rocky Springs, Natchez Trace Parkway, 8-IV-1978, B. Stark (USNM Type no. 75971). Other paratypes: Mississippi, Claiborne Co., Owens Crk., 3 miles south of Rocky Springs, Natchez Trace Parkway, 17-IV-1977, 19-IV-1977, B. Stark (B. Stark).

Discussion.—Three species of *Hastaperla* are represented in eastern North America. Both *H. chukcho* and *H. orpha* Frison can be easily distinguished from unpatterned *H. brevis* (Banks) by the presence of a longitudinal abdominal stripe, a dusky pronotum, and a slightly elongated epiproct tip. The laterally striped pronotum and square-edged epiproct tip of *H. orpha* differs from the entirely dusky pronotum and round-edged epiproct tip of *H. chukcho*. The subgenital plate of *H. orpha* is more deeply indented along the lateral slopes than is that of *H. chukcho*.

Etymology.—The Choctaw Indian word *chukcho*, meaning a striped object, describes the distinctive pattern on the new species, and is used as a noun in apposition.

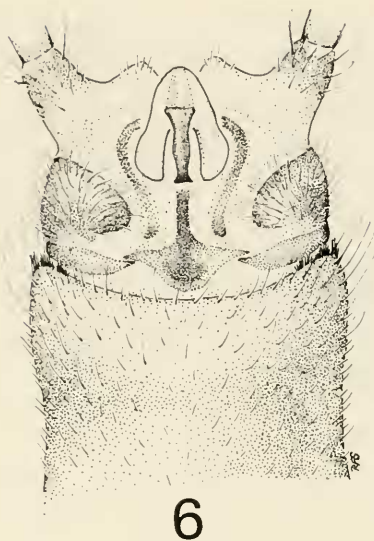
### *Alloperla natchez* Surdick and Stark, NEW SPECIES

Figs. 6–10

General color pale green in life, white in alcohol. Antennae pale basally, dark beyond 3rd segment; head unpatterned except for 3 dark ocellar rings; occiput narrow with lateral edges tapering immediately posterior to compound eyes. Pronotum unpatterned, square with rounded corners; mesonotum, metanotum and abdomen lacking dark markings; cercal segments 9. Wings macropterous, hyaline, representative of genus without reduction in venation or size.

Male.—Forewing length 6 mm; body length 5–5.5 mm. Epiproct tip elongate, fingershaped in dorsal aspect, tapering towards apex along sinuous lateral edges; 3 $\times$  longer than proximal width, flattened in lateral aspect with apex angled ventrally; finely haired ventrally; set in enlarged cowl extending anteriorly even with epiproct apex. Basal anchor 2 $\times$  as wide as long. Aedeagus membranous. Lateral brushes on segments 5 though 9.

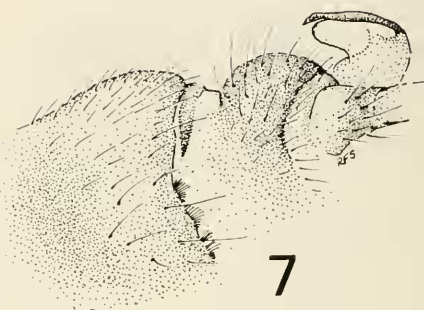
Female.—Forewing length 6.5–7 mm; body length 5.5–6.5 mm. Subgenital plate with sides sloping shallowly to a median angle projecting posteriorly



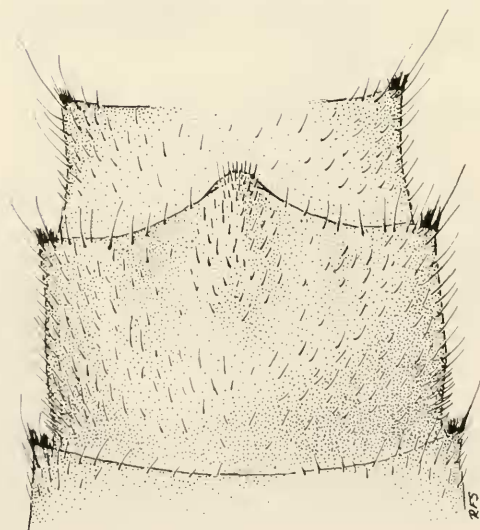
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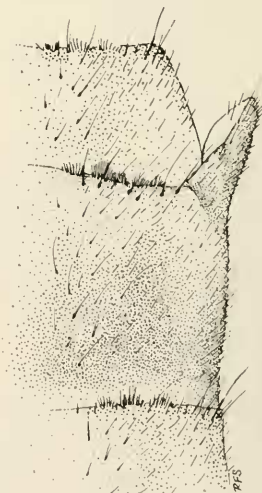
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Figs. 6-10. *Alloperla natchez*. 6, Male terminalia, dorsal. 7, Male terminalia, lateral. 8, Epiproct, dorsolateral. 9, Female terminalia, ventral. 10, Female terminalia, lateral.

$\frac{1}{4}$  longer than 8th sternite; lateral aspect slightly conical apically; apex as hairy as remainder of sternite; inside of apex and 9th sternite sparsely haired. Vagina membranous. Lateral brushes on segments 6 or 7 through 9.

Types.—Holotype ♂, allotype ♀, 2 ♂ 6 ♀ paratypes: Mississippi, Claiborne Co., Little Sand Crk., Rocky Springs Recreation Area, Natchez Trace Parkway, 22-IV-1978, B. Stark (USNM Type no. 75972). Other paratypes: Mississippi, Claiborne Co., Big Sand Crk., 8 miles W. Utica, 18-V-1978, B. Stark and L. Temple, (B. Stark).

Discussion.—*Alloperla natchez* can be distinguished from the similar *A. leonarda* Ricker by details of the epiproct. In both species, the epiproct tip is set in an enlarged cowl, but in *A. leonarda*, the epiproct tip is parallel sided in dorsal aspect and twice as thick as in *A. natchez* in lateral aspect. Laterally, the apex is bluntly rounded in *A. leonarda* but tapered and pointed in *A. natchez*. *Alloperla atlantica* Baumann bears a similar epiproct, but it is partially pubescent and sharply pointed dorsally and lacks an enlarged cowl.

Etymology.—The specific epithet *natchez* commemorates the former inhabitants of the type-locality, the Natchez Indians.

#### LITERATURE CITED

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